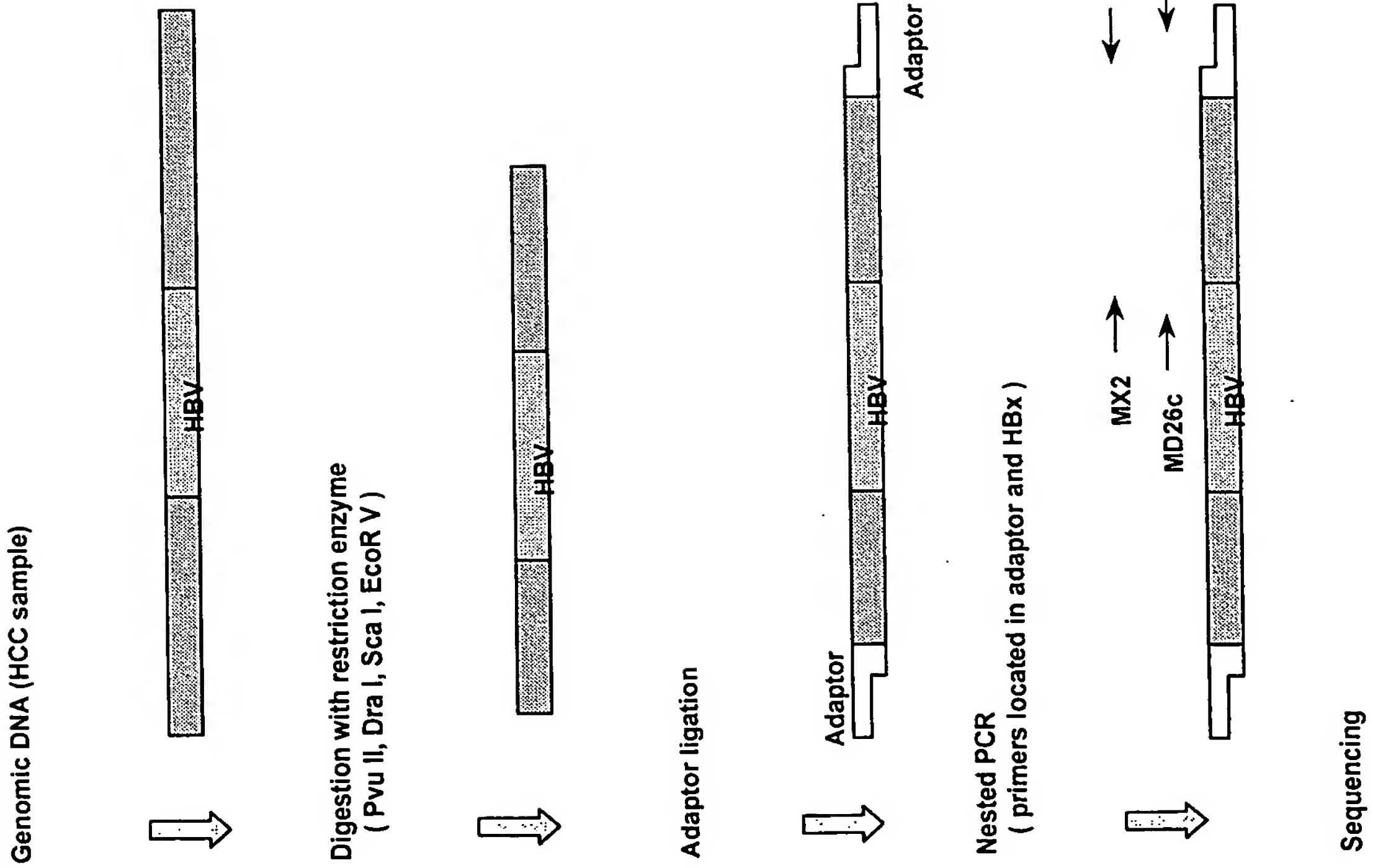
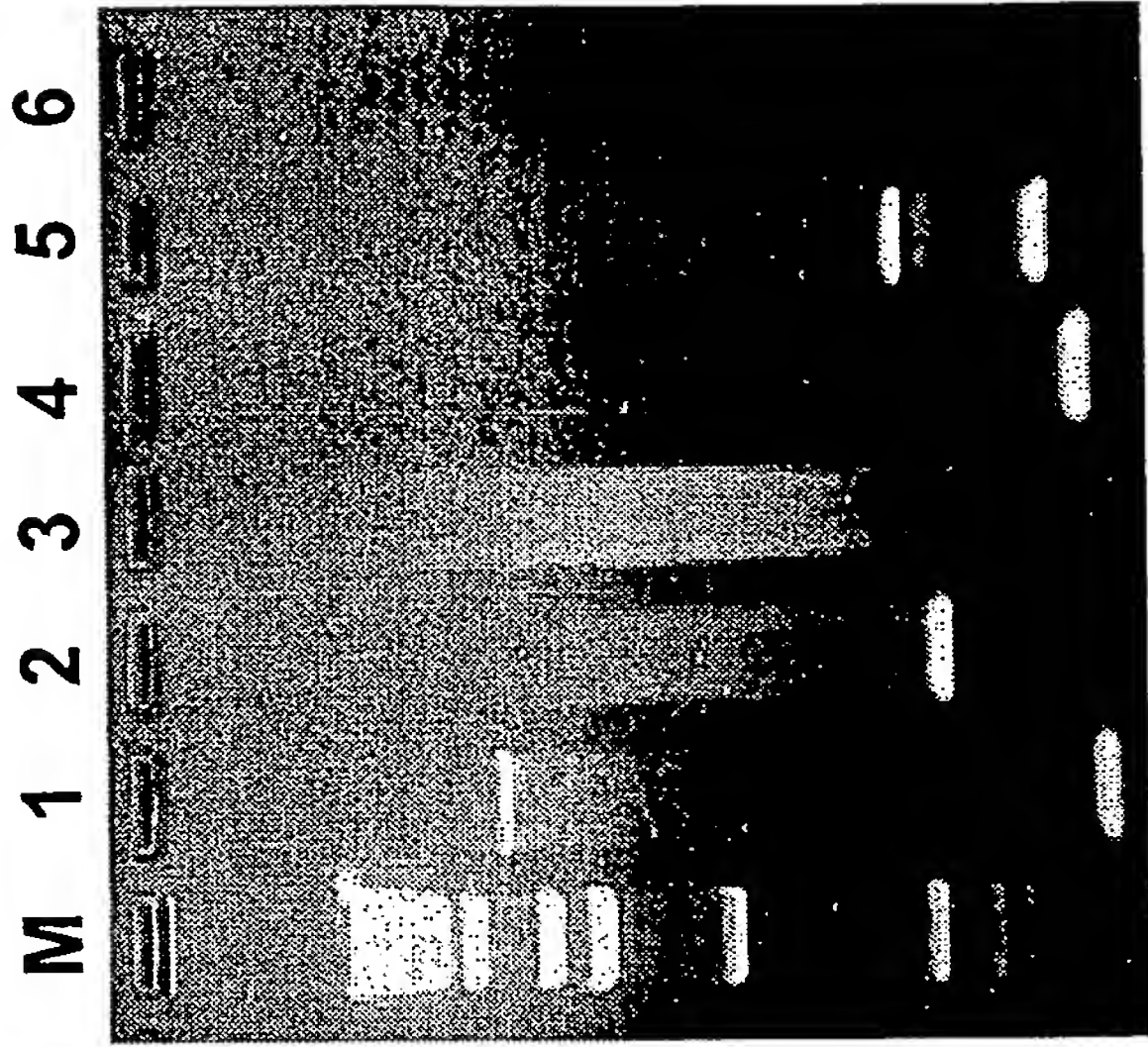


Fig.1

a



b



c

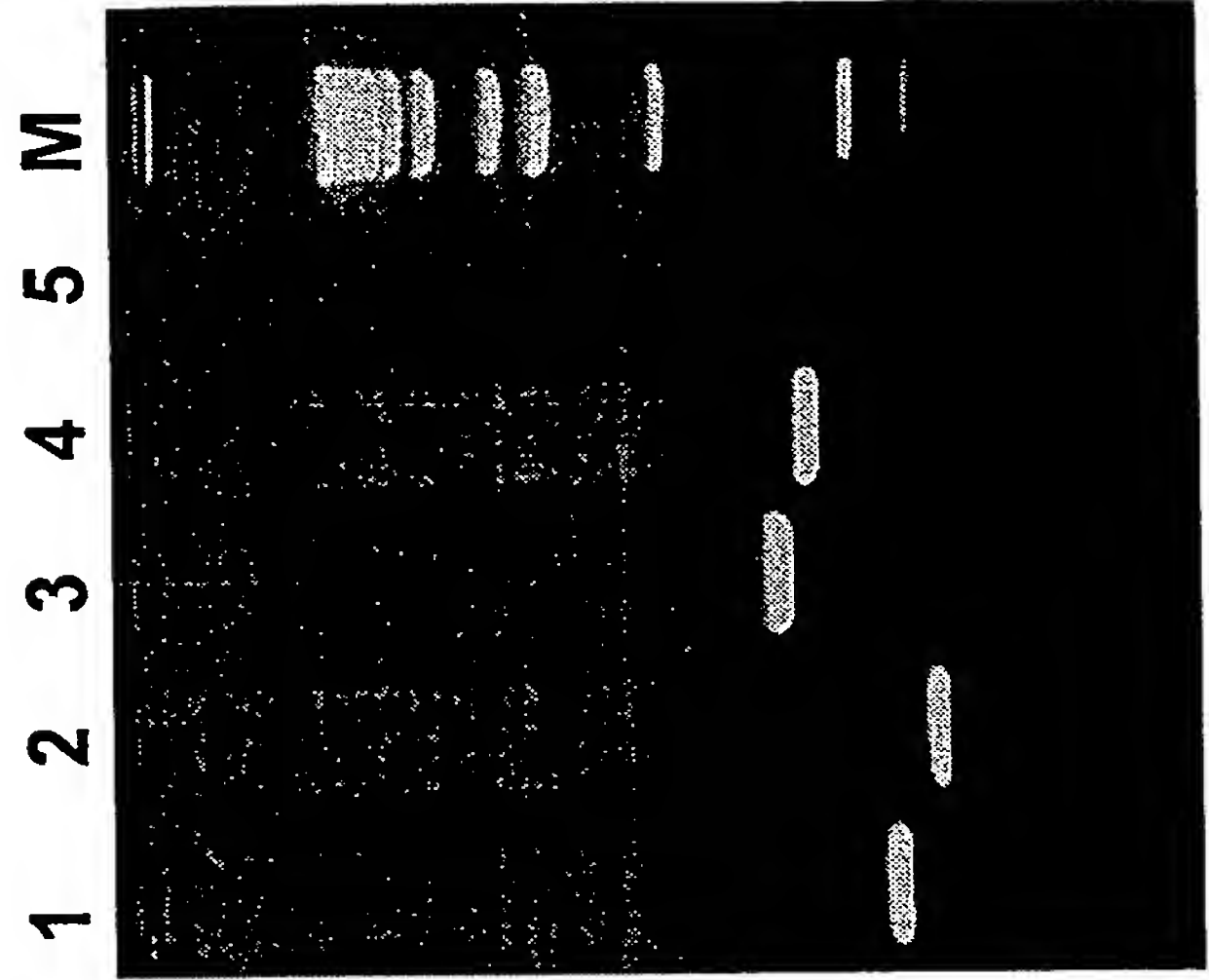


Fig. 2

a

- 1) HCC131 TTCACCAGCACCATGCAACTTTTTC/¹⁸²⁶**ATCTGCCCGTCTCGGCCTCCCAAAG**
- 2) HCC143 GTACTAGGAGGCTGTAGGCATAAAT/¹⁷⁹⁴**GTCCTATCTTTCCTCACTGTCCAG**
- 3) HCC146 GTAGGCATAAATTGGTCTGTTCACC/¹⁸⁰⁷**TTTTTTTTTTTATTTTGAG**
- 4) HCC002 AGTTGGGGAGGAGATTAGGTTAAA/¹⁷⁶²**GAGTCTCACTTGTCCAGGCTGGAG**

b

MLL4 gene (AD000671)

Exon 3 15295...17315
Intron 3 17316...17869 (*Alu repeat 17521...17812*)
Exon 4 17870...17983

17221 tagaggagaa gatgttcagc ctctcaaga gagccaaagt qcagctattc aagatcgatc
17281 aqcaqcaqca qcagaaggtg qcagdtcca tgcggtgag tgtgtccct gggcccagcg
17341 gcacaccag ccaccagcc tccattctt gcaacccct aacctccgc ctcttggac
17401 actttccagc attgcgggga accctcagaa cctgccttc tgtgatcccc cacctcctt
17461 tgttctccc cagacctggc ccttcttgt gctagttccc tgtccctatc tcc/3) tttttt
17521 ttttttttt atttttgaga cc/4) gagtctca ctgtgccag gctggagtg agtggcgtga
17581 tctcggctca ctgcagcctt tgcctccccg gtccaagaga ttctcctgcc tcagtctctc
17641 gagtagctgg gactacaggt gcccatcacc agcctgggt aattttgta ttttagtag
17701 agacaggggtt tcaccacatt ggctaggctg gtcttgaact cctgacctcg tg/1) atctgccc
17761 gtctcggcct cccaaagtgc tgggattaca ggcatacagc accacaccca gctccct/2) gtc
17821 cctatcttc ctactgtcc agccctgac cctgtttatt cctgccagc taagccctgg
17881 agggcagatg gaggaggtgg ccggggdgt caagcagatc tcgacagag qccctctccg
17941 ctctgaagat gactcgttg aagdaaag agagcggccc tcagtatgca toggaggag

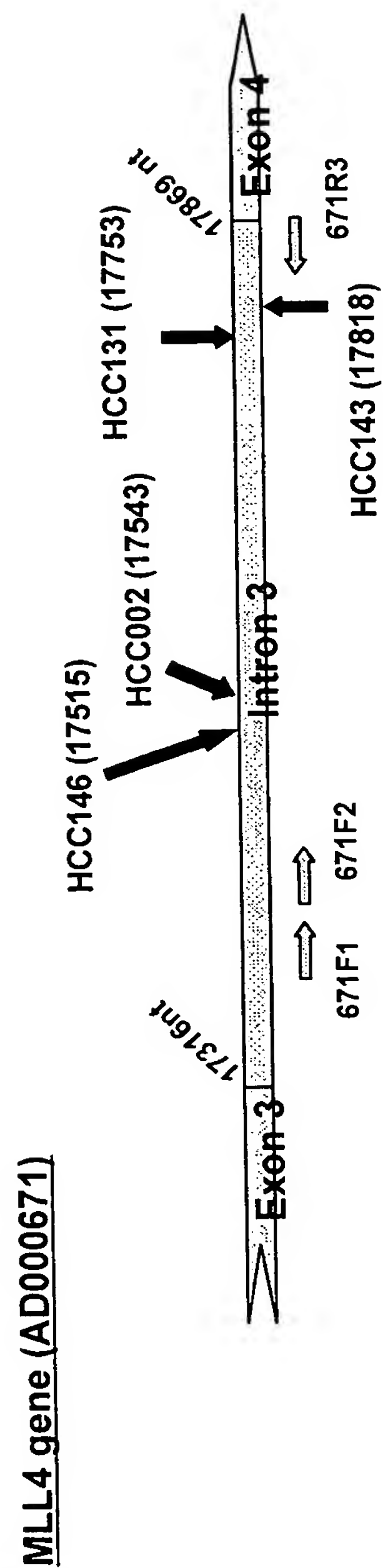
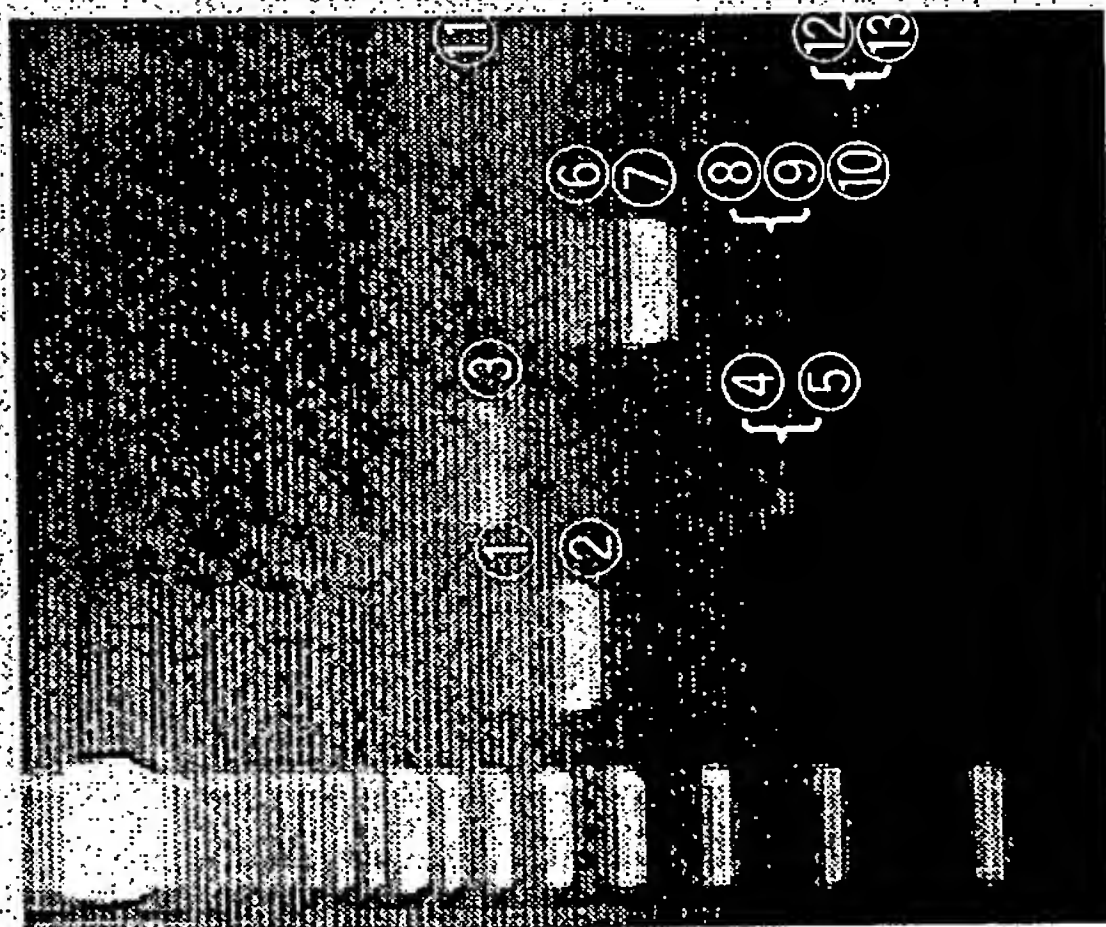
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Fig. 4

a

100bp ladder
HCC131
HCC002
HCC143
HCC146



Primer

HBX coding region (MD26c)

MLL4 exon 5

b

HBX MLL4

frame

Ex6

Ex5

Ex4

Ex3

Ex2

Ex1

Ex0

Ex-1

Ex-2

Ex-3

Ex-4

Ex-5

Ex-6

Ex-7

Ex-8

Ex-9

① Out

② In

③ Out

④ Out

⑤ In

⑥ Out

⑦ Out

⑧ Out

⑨ Out

⑩ In

⑪ Out

⑫ In

⑬ In

Integration site

Stop codon

End of HBX

HCC002

HCC143

HCC146

17543 nt

389 nt

17870 nt

17870 nt

-GAC-Tgt

343 nt

ag-CT-

17870 nt

-CAG-gt

261 nt

ag-CTG-

17870 nt

17818 nt

421 nt

17843 nt

17843 nt

-GAC-Tgt

343 nt

ag-CC-

17870 nt

-GAC-Tgt

343 nt

ag-CT-

17870 nt

-CAC-c

257 nt

gt-C-

17839 nt

17517 nt

434 nt

17870 nt

17870 nt

-AAG-gt

273 nt

ag-CTG-

17870 nt

-CAG-gt

261 nt

ag-CTG-

17870 nt

Fig. 5

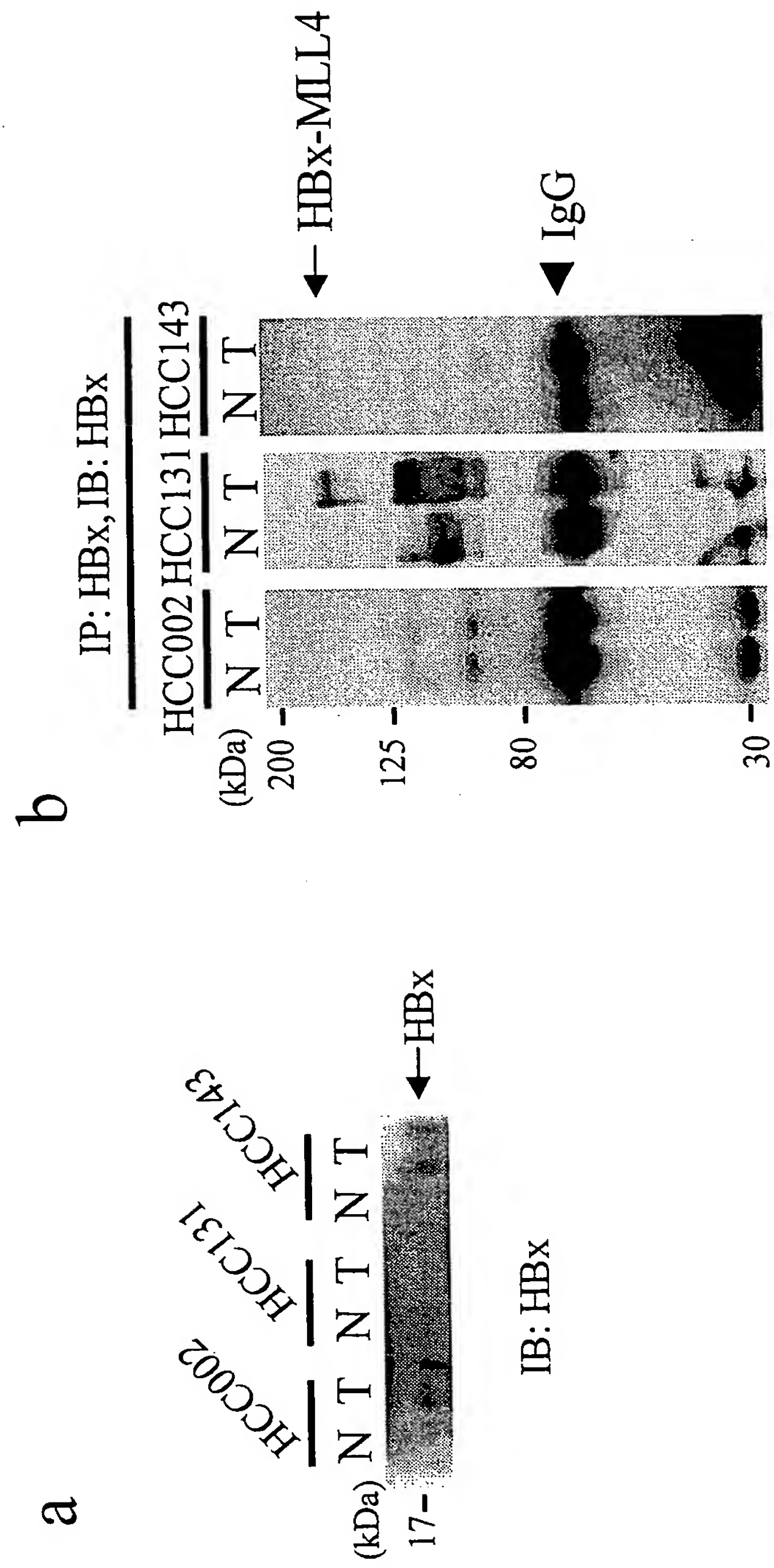


Fig. 6

chromosome 19q13.1 (AD000671) ML4 intron3/exon4

17281 agcagcaga gacagaggcg gcagcttoca tgcggcgagc tgggtgctt gggccagcgg
 17341 gcacacccag ccacccagcc tccattcttt gcaacccct aacctccgc ctcttggac
 17401 actttccagc attgggggga aacctcagaa cctgcctttc tggatccc cacttcttt
 17461 tggctctcc cagacctggc ccttctctgt gctagttcc tgcctctac ttcttttt
 17521 tttttttt atttttgaga ccgagctca cttgttccg gctggagtc agtgggtgga
 17581 tctgggtca ctgcagctt tgcctccgg gttcagaga ttctctgac tccgtctctc
 17641 ggttgggg gactacaggt ggcctccac aggcctggc aatttttga tttttagag
 17701 agacagggg tcaacacatt ggttggcgt gctctgact ccgacctcg tgcctggg
 17761 gcttgggct cccagagtc tgggattaca ggcaltcagc accaccca gctctctc
 17821 cctatcttc ctactgtc agccctgac cctgtttatt cctggccagc tggctctgg
 17881 agggcagatg gggggggggc cggggctgt caggcagatc tccgacagag gctctctg
 17941 gctcgaagat ggtcgggtgg agctagag agggggcc tccagtatga tggggagag
 18001 gggctgag agactggg gggggggg ggtggggg gggcagctg ccacacaca

↘ : HBV integration site

chromosome 17p11.2 (A0087294)

24481 tgaacata ctgcaatgg gggcgagcg gggcgagga gtcgagac cacaacgg
 24541 caggcagga agggataga actcagtcg cgtccgac cgtgacac tgaatgac
 24601 agggagat aatcgtac ctgttttaa ccatcattaa ctgggtttt ggtgttgtt
 24661 tgtttgttg tgtgttttc gggggggt ctgtgggt cgtccaggc ggggtgcat
 24721 ggggggcat ggggtcatg cactccgc ctccgggttc agcagttct cctggctca
 24781 ggtccaggc tgggtggat taccgggccc ggcacacag ctgggtat ttttgat
 24841 ttttagagag aggggttct gtcagttgg ccaggctgg ctggaatcc tgaatcag
 24901 tggatccgct aactcagct cccaggtgc tgggattaca ggcaltgac actggctgg
 24961 ggggttttg tttttaata agtaccggc ctgattct aaccaataa ctattctat
 25021 taacacagc ctgtctggc cgggcagc agttgtctc atgtcaggt ctccagag
 25081 cgggtgga gggagaggt cagggaaa tgtttccca ggggtttct tccagctgga
 25141 accagggg ggcacagga aaggggga gggagagc aggggtttct tcaattcca